

The Development of Javanese Glossary Website as a Form of Language Maintenance and Revitalization

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Abstract—As a vital component of cultural identity, language is under pressure as a result of globalization. This article discusses the creation of a website that provides a dictionary of Javanese phrases to help preserve and revitalize the language. In this study, we collect, categorize, and display Javanese words on electronic resources. In addition, the system usability scale (SUS) was used to conduct usability tests on the investigated websites to determine how user-friendly they actually were. Gathering terms from multiple sources, categorizing them, and developing a user-friendly interface with a search bar are all steps in the process of making a website. Users from all walks of life fill out the SUS questionnaire as part of the usability testing process. The test results reveal how well the website satisfies its users' requirements. Creating a database of Javanese words online and putting it through the SUS test is a great example of how technology can be used to help preserve a language and its heritage. It is believed that by taking this step, more people will become familiar with the Javanese language and become invested in its continued existence in the modern world. The usability testing results demonstrate that the development strategy and interface design effectively fostered a positive user experience. High scores on the SUS questionnaire, with an average rating of 80.25, indicate that users find the website satisfactory and user-friendly.

Keywords: list, terms, java language, website, system usability scale

I. INTRODUCTION

Language is an essential component of the cultural identity of a society and plays an essential part in coming to terms with one's own history and realizing one's historical background. However, in this era of globalization, a large number of regional languages face a major risk of extinction due to a loss of use and a lack of attention paid to the preservation of the languages. The Javanese language is a regional language that is rich in culture, history, and day-to-day life. Like other regional languages, it suffers comparable threats [1]. Because of this, there is a pressing need to take active measures to preserve and revitalize the Javanese language.

This article's objective is to provide an explanation of the creation of a website that lists phrases in Javanese as a novel approach to the preservation and revitalization of the Javanese language. New options to conserve language and culture in ways that are more inclusive and accessible to society have become available as a result of the widespread adoption of information technology, in particular the use of digital platforms [2].

When viewed in this light, the act of gathering, arranging, and disseminating Javanese terminology through the

medium of a website is a step forward in the process of preserving the integrity of this language. Collecting terminology that encompass all facets of life, such as traditions, art, cuisine, and history, was an important part of the project. This required careful deliberation and selection during the process. Users are able to traverse the site more simply and locate information that is pertinent to their needs as a result of these phrases being organized according to particular categories or subjects [3].

In addition to that, the website usability testing that will be discussed in this article will employ the system usability scale (SUS) approach to evaluate the efficiency of the user interface as well as the practicability of users accessing and utilizing this particular website [4]–[9]. The findings of this test will provide useful information regarding how visitors behave and interact with the website in an effort to comprehend and use Javanese terminology.

It is intended that these actions, which include the creation of a website for a Javanese lexicon and an evaluation of its usability, will be able to make a substantial contribution to the preservation and promotion of the Javanese language and culture. By maximizing the use of information technology in efforts to preserve and revitalize language, it is believed that this priceless

cultural heritage can continue to be expanded and valued by future generations and wider society in the modern era, which continues to flourish.

The Javanese language, rich in cultural heritage and history, currently faces the challenges of globalization and cultural homogenization. This paper addresses the pressing need for the preservation and revitalization of the Javanese language. It highlights the declining use of regional languages in the face of dominant global languages, emphasizing the potential loss of cultural identity and heritage. The objective of this study is to counter this trend by utilizing digital technology. Through the development of a Javanese glossary website, this research aims to provide an accessible platform for learning and using the Javanese language, thereby contributing to its preservation and revival in the modern world. The introduction effectively sets the stage for the reader, detailing the problem at hand and outlining the paper's goals of leveraging technology to foster a resurgence in the use of the Javanese language.

II. LITERATURE REVIEWS

A. Language and Cultural Identity

According to the findings of Fishman's research, the most important factor in preserving the cultural identity of a community is the language it uses [10]. Language is an important component in the transmission of cultural beliefs, conventions, and traditional practices from one generation to the next. Regional languages such as Javanese, which are spoken in less and fewer places as a result of globalization, are in danger of dying out as a result of a lack of attention paid to the cultural preservation of these languages.

B. Technology in Language Preservation

The advancement of information technology has made previously unavailable options available to organizations that are working to preserve languages. Recent studies have shown that the development of digital platforms such as websites and applications can be a useful instrument in the dissemination of linguistic and cultural information [11]. Additionally, technology allows for the production and dissemination of cultural content through digital media, which contributes to the maintenance of regional languages.

C. Usability and Usage Evaluation

According to what C. Kartiko [4] has said, usability evaluation is an essential part of the process of building an efficient user interface. SUS is a method that is frequently used to gauge customer happiness as well as the efficiency of utilizing a system [5], [12], [13]. Usability testing conducted with SUS has been helpful in identifying areas of improvement and improving user interactions with technology [14].

D. Development of Javanese Glossary Website

It has been demonstrated that the creation of a website that functions as a language glossary is an effective technique for the preservation and revitalization of languages. Examples of similar projects that were completed successfully include the creation of an Android-based digital Javanese dictionary, which was proposed by N. H. Insani et al [1] and S. Ratnawati et al [15]. They were successful in both generating digital Javanese language learning media based on Android and determining the quality of products based on Android that teach Javanese as a language. According to the findings of their investigation, the educational media product deserves to be placed in the excellent category.

In addition to this, there are also other products that are very much like it, such as Novelette, which is a form of digital learning media that assists teachers and students in the process of carrying out visual storytelling by giving them a role in the process of generating and composing the narratives that A. Addone et al [2] proposed. In the realm of education, they cited this medium as a potentially fruitful means of fostering originality and divergent thought, aided and abetted by technical solutions, through the practice of digital storytelling.

This article intends to construct a website listing terms in Javanese as an innovative step in attempts to sustain and revitalize the language in 2023. The foundation for this article comes from the literature analysis that was presented earlier in this section. The utilization of information technology as well as usability evaluation through the application of the SUS method will form the basis of this approach, with the ultimate goal of making a substantial contribution to the preservation and development of the Javanese language both in the present and in the foreseeable future.

In this study shares commonalities with these works in the use of digital platforms for language preservation. However, it stands out in its specific focus on the Javanese language and the development of a comprehensive digital glossary, an area less explored in existing literature. The existing literature shows a gap in comprehensive digital tools specifically for the Javanese language. In this study addresses this by creating a user-friendly glossary website, expanding on the methods and outcomes of previous research.

III. METHODOLOGY

This study makes use of a multi-pronged approach that incorporates research in libraries, the creation of websites, and usability testing through the application of the SUS methodology. Figure 1 shows an outline of the more specific measures that were taken in this work.

A. Data Collection on Javanese Terms

The gathering of Javanese language terminology was carried out using a wide variety of sources including

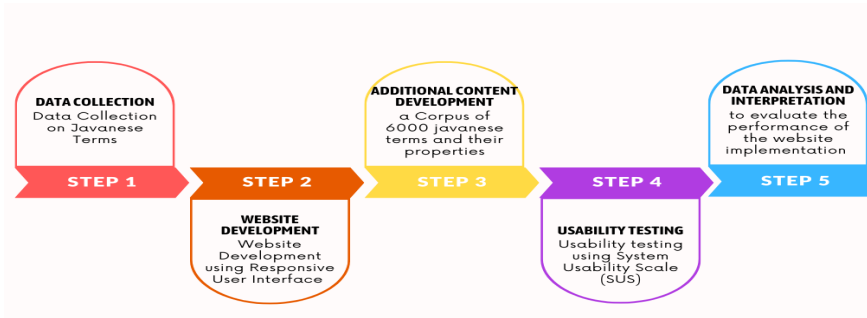


Figure 1. Proposed method

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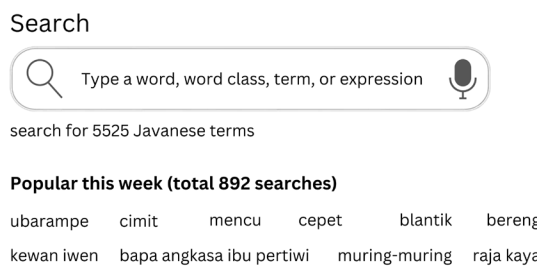


Figure 2. Javanese glossary website interface design

dictionaries, literary literature, historical works, and cultural information gathered from the Central Java Language Center from members of the Javanese speaking community.

The term data that was collected is then sorted into a number of categories, including traditions, arts, cuisines, apparel, environments, and histories. A definition, some synonyms, some usage examples, and some additional information are provided next to each term.

B. Website Development

The Java glossary website was built using web technology, and it features a responsive user interface, so that it can be visited using a variety of devices.

Searching by keywords, browsing by category, and interactive features that allow users to contribute by adding new terms are some of the features that have been developed, as illustrated in Figure 2. Design of the user interface for the Java word list.

C. Additional Content Development

In addition to a dictionary of terminology, this website also features articles and short stories written in Javanese. The goal of these features is to pique the interest of website visitors in studying and employing the language. This supplementary information also comprises entries or words (phrases) in a corpus of 6,000 Javanese terms and their properties, so that the process of creating a Javanese language corpus might continue at a later time. It is

necessary to take into consideration the collection of entries and words, phonetic transcription of entries, pronunciation of entries, descriptions of entries, and linkages between entries. The process of creating a corpus involves a number of stages. To begin, the proposed entries, along with phonetic transcriptions and descriptions, are sent to the editor section. After being checked in the new editor section, they are sent on to the second stage, which is going to the validator section to be checked and validated, Figure 3 depicts this process.

D. Usability Testing with System Usability Scale (SUS)

For the purposes of usability testing, participants are recruited from a wide range of age groups, backgrounds, and levels of experience in using various types of technology. Participants were challenged with searching for particular terms, browsing through categories, and

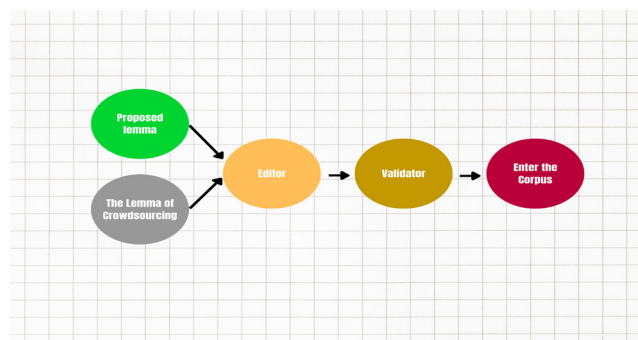


Figure 3. Entry collection or editing flow

Table 1. SUS testing instrument

No	Question
Q1	I will use this website application more often
Q2	I think this website application is too complex (contains lots of unnecessary things)
Q3	I consider this website application easy to use
Q4	I need help from a technical person to use this website application
Q5	I assess that the functions/features provided on this website application are well designed and prepared
Q6	I think there are many incompatibilities in this website application
Q7	I feel that most people will find it easy to use this website application quickly
Q8	I consider this website application to be very complicated to use
Q9	I feel very confident using this website application
Q10	I need to learn before I can use this website application well

interacting with supplemental content.

After the tests, the participants were given a questionnaire regarding the SUS testing instrument to fill out. This questionnaire had statements regarding the participants’ overall level of satisfaction with the website as well as the website’s relative ease of use, as shown in Table 1.

Aside from that, there are also rules for deciding the results of the SUS score evaluation computation, which can be shown in Figure 4. These guidelines consist of three points of view: acceptability ranges, a grade scale, and adjective rating. Figure 4 can be found here. Not acceptable, marginal (low and high), and acceptable are the three levels of acceptability ranges. Not acceptable is the lowest level. Acceptable is the highest level. While the letter grades that make up the scale are A, B, C, D, and F. When it comes to adjective ratings, there are a greater variety of tiers, including the worst that can be imagined, terrible, okay, good, excellent, and the best that can be imagined [16].

E. Data Analysis and Interpretation

The SUS score, which was derived from the SUS testing tool, is assessed in order to gauge the user’s level of contentment with the site as well as its efficiency. In addition, qualitative data derived from participant replies were reviewed in order to identify issues or roadblocks in the website’s user interface and functionalities. The

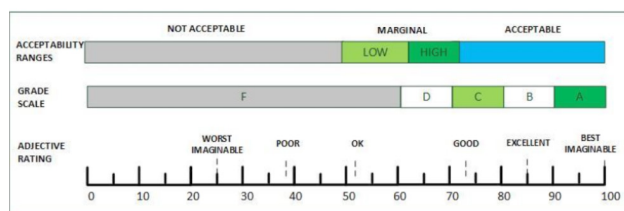


Figure 4. SUS assessment list

findings of the analysis are utilized to evaluate the performance of the website implementation in terms of contributing to the preservation and revitalization of the Javanese language, as well as to identify areas in which further improvement is required.

With the help of this comprehensive methodological strategy, it is believed that the production of a website containing a list of Javanese phrases and usability testing with the SUS technique will result in a platform that is effective, engaging, and helpful for users in the ongoing efforts to preserve and revitalize the Javanese language.

IV. RESULTS AND DISCUSSION

A. Website Development Results List of Javanese Language Terms

Collecting data from a wide variety of sources, such as traditional dictionaries, literature, and members of the Javanese speaking community, was an important step in the process of developing a website for a Javanese lexicon. The term “data obtained” refers to a wide variety of characteristics of culture, including traditions, aesthetics, cuisine, garb, the natural world, and the course of human history. The data is organized into these categories so that users may simply access and explore topics that are relevant to their particular interests or requirements. The web address for the site is: <https://senaraiistilahjawa.kemdikbud.go.id/>.

The user experience (UX) and the user interface (UI) of the website have both been given considerable consideration during the design process. As can be seen in Figure 5, the keyword search function gives users the ability to rapidly locate the terms they need. In addition to that, there is a crowdsourcing element, as well as information about the terms that are being searched for, as shown in Figure 6.

There is also a menu for an interactive mode and a game mode, both of which allow users to be more creative and imaginative by listening to the voice of the narrator, which will read the available material as seen in Figure 7.

In addition to that, this website is accessible to people with disabilities, allowing them to continue to communicate and use the application in a manner that is simple and uncomplicated. The narrator will read aloud any text that is displayed on the screen, and in addition to that, you can also issue commands to messages by typing them out, as demonstrated in Figure 8.

B. Menu for Disabilities on the Javanese Glossary Website

Usability testing was performed with a large number of participants, all of whom were of varying ages and came from a variety of different backgrounds. The participants are given a series of tasks to complete, such as searching for particular terms, exploring categories, and interacting with supplementary content. The SUS questionnaire,

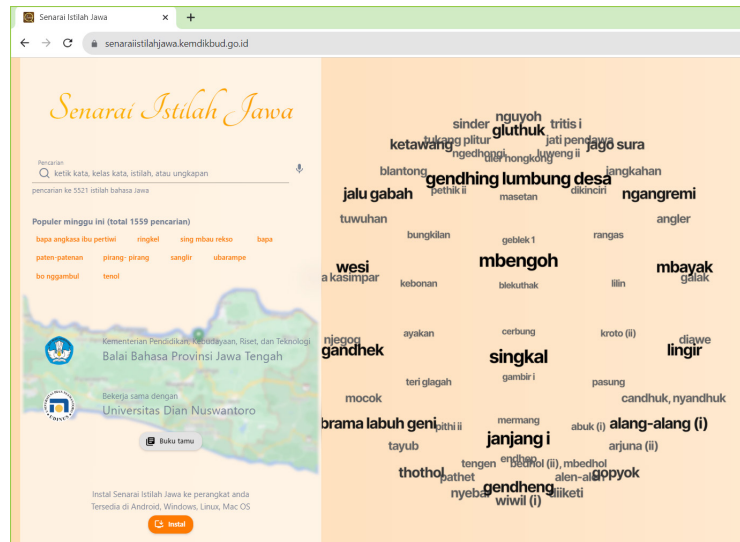


Figure 5. Home page of Javanese Glossary website

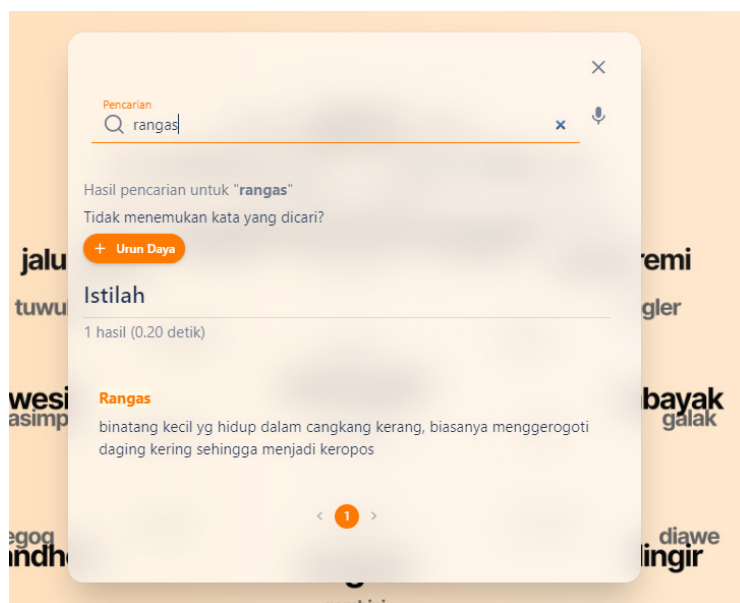


Figure 6. Search results page of Javanese Glossary website

which comprised of statements pertaining to usability, efficiency, and satisfaction, was given to the participants once the work had been finished, and they were asked to fill it out.

In Table 2 it is explained that there are 10 questions starting from Q1 to Q10, with a list of questions testing instrument referring to Table 1. The results of the tests showed a high average score on the SUS questionnaire, which can be shown in Table 2. This indicates that there is a strong degree of user satisfaction with the usability of the website that contains the Javanese language glossary. This score represents how well you were able to build an interface that is user-friendly and efficient in the way that information is presented. The participant replies were analysed qualitatively, and the results showed that the interface design was assessed as intuitive, navigation was rated as fluid, and the search tools were rated as helpful.

To ensure clarity and reproducibility, it is important

to explain how the SUS score is calculated. The SUS methodology involves participants rating their agreement with ten statements about the system’s usability on a five-point Likert scale, ranging from “Strongly Disagree” to “Strongly Agree.” The steps for calculating the SUS score are as follows:

- For each of the odd-numbered items (1, 3, 5, 7, 9): Subtract 1 from the user response. This scales the responses for these items to a range of 0 to 4, where 4 is the most positive response.
- For each of the even-numbered items (2, 4, 6, 8, 10): Subtract the user response from 5. This reverses the scale for these items so that 4 is the most positive response.
- Sum the adjusted scores: Add up the values for all ten items. This gives a total score ranging from 0 to 40 for each participant.
- Multiply the total by 2.5: This converts the total score



Figure 7. Details of Javanese Glossary website

to a range of 0 to 100.

The final SUS score is an average of the individual scores from all participants. Higher scores indicate better usability, with scores above 68 generally considered above average.

In conclusion, the high SUS scores and positive qualitative feedback affirm that the Javanese glossary website is a valuable tool for language preservation. It serves as an accessible resource for current speakers and learners of Javanese, illustrating the potential for similar technological applications in the preservation of other endangered languages. This initiative not only enhances the usability and accessibility of Javanese language resources but also promotes greater engagement with and interest in the language, thereby contributing to its sustainability in the modern era.

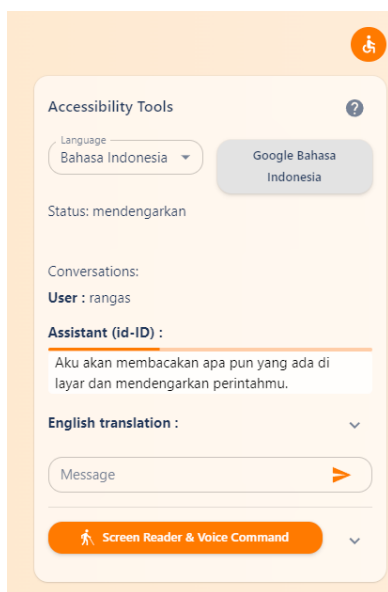


Figure 8. Menu for Disabilities on the Javanese Glossary Website

Table 2. SUS score calculation results

No	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	SUS score
1	4	4	4	4	4	4	4	4	4	3	97.5
2	4	3	3	4	3	3	3	4	4	1	80
3	4	3	4	3	4	4	4	4	4	2	90
4	2	4	4	4	3	4	3	4	3	4	87.5
5	2	3	4	4	4	4	3	4	3	4	87.5
6	2	4	4	3	4	2	2	3	2	0	65
7	4	4	4	4	4	4	4	4	4	3	97.5
8	4	4	4	4	4	4	4	4	4	4	100
9	2	1	2	4	3	2	3	4	4	4	72.5
10	4	1	2	2	4	0	4	0	4	0	52.5
11	2	4	4	4	3	1	4	4	2	4	80
12	2	3	4	4	3	1	3	4	2	3	72.5
13	2	4	4	4	4	4	2	4	4	0	80
14	0	2	2	2	2	2	2	2	2	2	45
15	2	3	4	2	3	3	1	4	4	3	72.5
16	3	3	3	4	4	4	4	4	3	4	90
17	3	4	4	0	3	4	3	4	3	0	70
18	1	4	3	4	3	3	2	3	2	2	67.5
19	4	4	4	4	4	4	4	4	4	4	100
20	4	4	4	3	4	4	4	4	4	4	97.5
Average SUS score											80.25

C. Discussion

The creation of a platform that enables users to obtain information quickly and participate in a way that is fun was one of the goals of the development of the website for the Java language glossary. The capability of this website to provide abundant and helpful information about Javanese terminology from a variety of cultural aspects might boost people’s understanding of this language as well as their desire in learning it.

The findings of the usability testing indicate that the development strategy and interface design have been successful in producing a positive experience for users. It is seen to be good if it receives a high score on the SUS questionnaire, with an average SUS score of 80.25 suggesting that it is good, which suggests that people feel comfortable using this website. Nevertheless, despite the fact that the outcomes were favourable, the participants’ insightful criticism served as an essential guide for making more enhancements, such as enhancing the functionality of the search tool, modifying the appearance, or including a user manual.

As a conclusion, the creation of a website containing a list of Javanese phrases and the conducting of usability testing via the SUS technique have been successful in producing an efficient instrument that will assist in the preservation and revitalization of the Javanese language. The accomplishment of this project highlights the significance of information technology in maintaining

and advancing regional languages and cultures in this era of widespread digitalization. It is believed that Javanese speakers will find this website, which will continue to be improved and developed based on feedback from users, to be an invaluable resource for them in the process of conserving and advancing their cultural heritage.

V. CONCLUSION AND FUTURE WORKS

The development of the Javanese Glossary Website has proven to be a significant step in the efforts to preserve and revitalize the Javanese language, an essential component of cultural identity threatened by globalization. This study successfully collected, categorized, and displayed Javanese words through electronic resources. The website development process involved gathering terms from various sources, categorizing them, and creating a user-friendly interface with a search feature. Usability testing was conducted using the system usability scale (SUS) to evaluate the website's user-friendliness across diverse user groups. The test results indicated that the website effectively met user needs, as evidenced by a high average SUS score of 80.25. This score suggests that users are satisfied and find the website easy to use.

By creating an online database of Javanese words and subjecting it to SUS testing, this project demonstrates how technology can be effectively utilized to support language preservation and cultural heritage. This initiative is expected to raise awareness and interest in the Javanese language, promoting its continuity in the modern era. Thus, the applied development strategy and interface design successfully fostered a positive user experience, significantly contributing to the broader efforts of Javanese language preservation.

It is hoped that the website for the Javanese Glossary would continue to contribute to efforts to preserve, introduce, and use the Javanese language in the digital age and in the future. This will be accomplished by continuing to improve and optimize this platform based on input from users and more research.

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